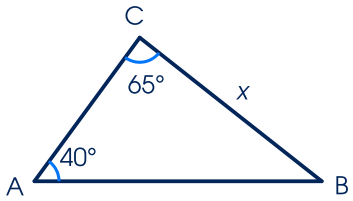
GCSE HIGHER · REVISION MAT 1

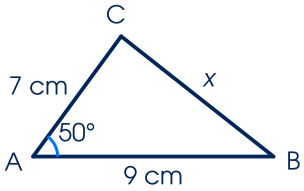
Sine and cosine rules

1 Find x.



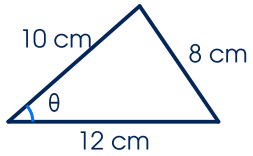
AB = 12 cm

2 Find x.



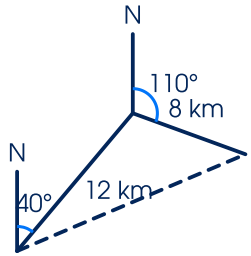
3 A triangle has sides 8 cm, 10 cm and 12 cm.

Show that its smallest angle, θ, is 41.4°.



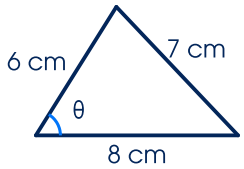
4 A ship sails 12 km on a bearing of 040°, then 8 km on a bearing of 110°.

How far is it from its start?



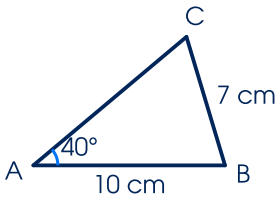
5 A triangle has sides 6 cm, 7 cm and 8 cm.

Show that θ = 57.9°.



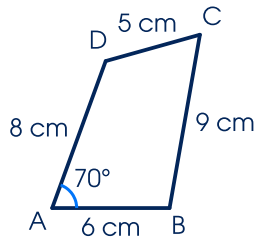
6 In triangle ABC, AB = 10 cm, BC = 7 cm and angle A = 40°.

Find the acute value of angle C.



7 In question 6, explain why angle C could also be 113.3°.

8 Find angle BCD.



Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Sine and cosine rules

1 $\frac{x}{\sin 40°} = \frac{12}{\sin 65°}$

x = 8.51 cm

2 $x^2 = 49 + 81 - 126 \cos 50°$

x = 7.00 cm

3 $\cos \theta = \frac{100 + 144 - 64}{240} = 0.75$

θ = 41.4°

4 Angle at the turn = 110°

$d^2 = 144 + 64 - 192 \cos 110°$

16.5 km

5 $\cos \theta = \frac{36 + 64 - 49}{96}$

θ = 57.9°

6 $\sin C = \frac{10 \sin 40°}{7}$

C = 66.7°

7 **$\sin(180° - \theta) = \sin \theta$, and 113.3° still leaves room for angle B.**

8 $BD^2 = 36 + 64 - 96 \cos 70°$

BD = 8.20

$\cos C = \frac{81 + 25 - 67.2}{90}$

Angle BCD = 64.4°

Mr&Mrs MATHS